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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,480	04/12/2004	Kazuhiro Yagishita	8305-245US (NP156-1)	3127

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EXAMINER

MCAVOY, ELLEN M

ART UNIT	PAPER NUMBER
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1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/822,480	Applicant(s) YAGISHITA ET AL.	
	Examiner Ellen M. McAvoy	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4 and 7-9 are still rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazato (6,569,818) in combination with Minami et al (5,792,733) or Nishikawa et al (5,245,070).

Applicants' arguments filed 12 May 2009 have been fully considered but they are not persuasive. As previously set forth, Nakazato et al ["Nakazato"] disclose a lubricating oil composition having a low phosphorus (P) content of 0.01 to 0.1 weight %, a sulfur content of 0.01 to 0.3 weight % and a sulfated ash of 0.1 to 1 weight %, which is comprised of (a) a major amount of mineral base oil having a low sulfur (S) content of at most 0.1 weight %, preferably at most 0.005 weight %, (b) an ashless alkenyl or alkyl-succinimide dispersant or derivative thereof in an amount of 0.01 to 0.3 weight % in terms of nitrogen atom content, (c) a metal-containing detergent such as an alkali metal or an alkaline earth metal salt of an alkylsalicylic acid in an amount of about 0.2 to 7 weight %, and may include other metal detergents such as sulfonate detergents, (d) a zinc dialkyl-dithiophosphate in an amount of 0.01 to 0.1 weight % in terms of a phosphorus content, and (e) an oxidation inhibitor selected from the group consisting of a phenol compound and an amine compound in an amount of 0.01 to 5 weight %. See column 2, line 25 to column 3, line 7. Nakazato teaches that the lubricating oil composition may be used in internal combustion engines including gas engines. See column 1, lines 5-11. Nakazato teaches

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that the lubricating oil compositions may contain other auxiliary additives such as phosphoric acid esters and phosphorous acid esters. Nakazato teaches that the additives can be incorporated into the lubricating oil compositions in an amount ranging from about 0.001 to 3 weight %. See column 7, line 59 to column 8, line 11. Applicants' invention differs by claiming a specific phosphorus acid ester compound, that of a triphosphate set forth by formula (1) in claim 1. However, as evidenced by Minami et al ["Minami"] or Nishikawa et al ["Nishikawa"], such triphosphate compounds are well-known in the art as antiwear agents in lubricating oil compositions. See the phosphorus-containing compounds represented by the formula in col.1, lines 52-58, in Minami, wherein the X substituents may all be oxygen. Minami also discloses lubricating oil compositions suitable for use in internal combustion engines in column 2, lines 3-23. Nishikawa discloses alkyl phosphates in column 2, lines 9-15, which may be used as an additive to lubricants. Having the prior art references before the inventors at the time the invention was made it would have been obvious to the skilled oil formulator to have added the triphosphate compound of either Minami or Nishikawa to the oil composition of Nakazato if its known imparted property was so desired. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in Nakazato allowing for the addition of phosphorus-containing compounds to the lubricating oil compositions.

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In response applicants amended independent claim 1, the only independent claim presented, to include that component (C), the alkali metal or alkaline earth metal detergent, is now required to be a salicylate detergent which has a metal ratio of 3 or less. Applicants argued that the advantageous effects achieved by the presently claimed composition are clearly demonstrated in Tables 1 and 2 in the specification. Applicants argued that the composition of Example 9 which contains no ZnDTP and a calcium salicylate detergent with a metal ratio of 2.7 exhibited better slipping velocity in the LFW-1 boundary friction test than the composition of Comparative Example 3 which contains the same amount of the same salicylate detergent and also contains ZnDTP. This is not deemed to be persuasive for several reasons. First, it is not clear that the results presented are unexpected to one of ordinary skill in the art. In Example 9, the slipping velocity average value is 0.124. For Comparative Example 3, the slipping velocity average value is 0.146 or a difference of 15%. However, the total sulfur content in Example 9 is 0.05 mass%, and the total sulfur content in Comparative Example 3 is 0.21 mass% which is directly due to using a ZnDTP compound having a 18.8 mass % sulfur content. Now, the lubricating compositions of Nakazato are required to have a sulfur content between 0.01 and 0.3 wt.%, the lower limit of which is 5X lower than Example 9 of applicants' invention. The examiner is of the position that the 15% increase in slipping velocity is due to the presence of a high amount of sulfur in the comparative example which is not required to be present in the Nakazato compositions.

Applicants further argued that inventive Example 1 exhibited better base number retaining properties in the ISTO test than composition in Example 2 which contains ZnDTP. Applicants argued that these results clearly demonstrate the superior results that are achieved by

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including the claimed salicylate detergent and in the absence of ZnDTP. This is not deemed to be persuasive because again applicants are comparing a composition containing a very low sulfur content (0.05 mass%) in Example 1 versus a composition containing a much higher sulfur content (0.21 mass %) in Comparative Example 2 which is directly due to using a specific ZnDTP compound having a very high sulfur content of 16 mass %. As set forth above, the lubricating compositions of Nakazato may have sulfur contents in the range of 0.01 to 0.3 wt. % which may be below applicants' inventive examples containing 0.05 mass % sulfur.

Further applicants argued that all of the Examples set forth in Table 3 in Nakazato contain ZnDTP at a phosphorus content of 0.03 wt.%. And that applicants cannot understand why one skilled in the art would have been motivated based on Nakazato to omit a component which is taught to be essential and which is taught to provide desirable high heat resistance. This is not deemed to be persuasive because zinc dialkyldithiophosphates are extremely well known lubricating oil additives which are effective as antioxidants and as extreme pressure/anti-wear agents. Nakazato teaches the addition of conventional zinc dialkyldithiophosphates to the lubricant composition in a very minor amount of 0.01 weight % in terms of a phosphorus content. Further, the examiner maintains the position that it would have been obvious to the skilled artisan to have removed an element in a composition if the function of that element was not desired. See MPEP 2144.04. The examiner maintains the position that it would have been obvious to the skilled oil formulator to have omitted the conventional zinc dialkyldithiophosphate component from the lubricating oil composition of Nakazato if the function attributed to the component was not desired or required. See *Ex Parte Wu*, 10 USPQ2031 (Bd. Pat. App. & Inter. 1989).

Claim Rejections - 35 USC § 103

Claims 1-5 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (6,001,780) in combination with Minami et al (5,792,733) or Nishikawa et al (5,245,070).

Applicants' arguments filed 12 May 2009 have been fully considered but they are not persuasive. As previously set forth, Ho et al ["Ho"] disclose an ashless lubricating oil composition that comprises (a) a major amount of base oil of lubricating viscosity, (b) from about 1 to 6 wt.% of an untreated succinimide dispersant, and (c) from about 1 to 6 wt.% of a borated succinimide dispersant. Ho teaches that the lubricating oil composition may contain other additive components including metal detergents such as metal salts of hydroxy alkyl or alkenyl aromatic compounds, antioxidants including phenolic-type and amine-type compounds in an amount of about 0.05 to 3.0 wt.% per total amount of the engine oil, and antiwear agents including phosphates and phosphites. See column 5, line 30 to column 6, line 14. Ho allows for the addition of extreme pressure agents to the lubricating oil composition which include zinc dialkyldithiophosphates and 6 other types of extreme pressure agents; however, Ho does not require the addition of zinc dialkyldithiophosphate to the composition. See column 6, lines 31-36, and the examples. Applicants' invention differs by adding to the composition a specific phosphorus acid ester compound, that of a triphosphate set forth by formula (1) in claim 1. However, as evidenced by Minami et al ["Minami"] or Nishikawa et al ["Nishikawa"], such triphosphate compounds are well-known in the art as antiwear agents in lubricating oil compositions. See the phosphorus-containing compounds represented by the formula in column 1, lines 52-58, in Minami, wherein the X substituents may all be oxygen. Minami also discloses lubricating oil compositions suitable for use in internal combustion engines in column

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2, lines 3-23. Nishikawa discloses alkyl phosphates in column 2, lines 9-15, which may be used as an additive to lubricants. Having the prior art references before the inventors at the time the invention was made it would have been obvious to the skilled oil formulator to have added the triphosphate compound of either Minami or Nishikawa the oil composition of Ho if its known imparted property was so desired. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in Ho allowing for the addition of phosphates and phosphites to the lubricating oil compositions as anti-wear agents.

In response applicants argued that one of the critical components of the claimed invention is an alkali metal or alkaline earth metal salicylate detergent having a particular metal ratio of 3 or less. Applicants argued that Ho does not teach a metal salicylate and thus does not teach the claimed metal ratio thereof. This is not deemed to be persuasive because Ho teaches that the lubricating oil composition may contain other additive components including metal detergents such as metal salts of hydroxy alkyl or alkenyl aromatic compounds, and metal salicylates are an example of such a detergent. Further, a neutral metal salicylate would have a metal to detergent ratio of 1 which meets the claimed limitation of “3 or less”.

THIS ACTION IS MADE FINAL. Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ellen M McAvoy/
Primary Examiner
Art Unit 1797

EMcAvoy
August 5, 2009